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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,317	07/02/2002	Patricia S. Bunt	BUR920010174	8271

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EXAMINER
GUERRERO, MARIA F

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 04/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/064,317	Applicant(s) BUNT ET AL.	
	Examiner Maria Guerrero	Art Unit 2822	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *1-7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This Office Action is the in response to the Election filed January 28, 2003. Claims 1-17 are pending.

Election/Restrictions

2. Applicant's election without traverse of Group II (claims 8-17) in Paper No. 3 is acknowledged.

Claims 1-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 3.

Information Disclosure Statement

3. The information disclosure statement filed July 7, 2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Applicant has not provided the documents listed on the Remarks.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 8 and 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerzberg et al. (U.S. 4,233,671).

Gerzberg et al. teaches electrically activating a dopant on a programmable element in a semiconductor device. Gerzberg et al. discloses altering the bonding configuration of the programmable element and using laser anneal (col. 1, lines 5-10, col. 2, lines 1-15, 25-35, col. 4, lines 28-50, col. 5, lines 5-32

5. Claims 8-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishimura et al. (U.S. 4,462,150).

Nishimura et al. teaches electrically activating a dopant on a programmable element in a semiconductor device (Abstract, col. 2, lines 5-15). Nishimura et al. shows heating the programmable element and rapidly cooling in less than a second (it is inherent)(col. 3, lines 28-40). Nishimura et al. teaches exposing the programmable element to actinic radiation using laser anneal (Abstract, col. 3, lines 28-35). Nishimura et al. shows using a laser having a wavelength of light that will not be absorbed by a cap layer (silicon dioxide) but that will be absorbed by the semiconductor material (Fig. 2C, col. 3, lines 30-35, col. 4, lines 5-42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (U.S. 4,462,150) in view Mehta et al. (U.S. 5,795,627).

Regarding claim 14, Nishimura et al. does not specifically show the laser comprising a 308 nm excimer laser. However, Mehta et al. teaches using a 308 nm excimer laser as an energy source as well known in the art (Abstract, col. 6, lines 1-11, 46-56).

Since, Nishimura et al. and Mehta et al. are both from the same field of endeavor of laser irradiation process, the purpose disclosed by Mehta et al. would have been recognized in the pertinent art of Nishimura et al.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Nishimura et al. reference by specifying the use of 308 nm excimer laser as taught Mehta et al. because the selection of any appropriated laser source is within the capabilities of a skilled in the art.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishimura et al. (U.S. 4,462,150).

Nishimura et al. teaches doping a semiconductor material, exposing the programmable element to actinic radiation, and determining the resistance value (col. 2, lines 65-68; col. 3, lines 1-2, 23-27, 38-47).

Nishimura et al. does not specifically show determining a test resistance value of the programmable element and comparing to a specific precise resistance. However, Nishimura et al. measured the resistance value and use the value to determine that the circuit elements and the spare element were electrically connected (col. 3, lines 38-47; col. 4, lines 20-25).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to recognize that Nishimura et al. is selecting a precise resistance in order to confirm the electrical activation process and to avoid defects (col. 3, lines 38-47).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wu (U.S. 4,198,246) teaches a method of reducing the resistivity of a doped polycrystalline silicon film with laser irradiation. Johnson (U.S. 4,677,742) shows exposing to actinic radiation to activate a dopant. Mukai (U.S. 4,617,723), Shacham et al. (U.S. 4,845,045), and Jones, Jr. et al. (U.S. 4,835,118) teach programming programmable elements. Somit Talwar et al. "Ultra-Shallow, abrupt, and highly-activated junctions by low-energy ion implantation and laser annealing" and C. Laviron et al. "Excimer-laser activation of dopants in silicon: a new concept for uniform

treatment over whole die area" teach using a 308 nm excimer laser as an energy source as well known in the art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Guerrero whose telephone number is 703-305-0162.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Maria Guerrero
Patent examiner
April 3, 2003